
How to Detect and Confirm Epidemic Yellow Fever

Purposes of Surveillance

- Detect epidemics early
- Estimate how many cases and deaths
- Assess extent of the epidemic
- See if an epidemic is spreading, and where
- Plan distribution of supplies and staff
- Determine effectiveness of control measures

Effective Surveillance

- Essential to recognition of epidemics
- Depends on clinical diagnosis of cases
- Depends on laboratory confirmation
- Requires effective reporting system

Diagnosis of Yellow Fever

- **Definitive diagnosis requires laboratory**
 - serology
 - virus isolation

- **Clinical diagnosis is not easy**
 - very difficult early in outbreak
 - malaria may be identical to early yellow fever
 - many causes of undifferentiated fever

- **Maintain high index of suspicion for**
 - fevers not responsive to antibiotics or antimalarials
 - increased admission and death rates from hepatitis
 - reports of many deaths following fevers

Spectrum of Clinical Illness

- **Undifferentiated febrile illness**
 - resembles many other fevers

- **Classic Yellow Fever**
 - fever, vomiting, epigastric pain
 - prostration, dehydration
 - scleral icterus
 - renal and hepatic abnormalities
 - hemorrhagic tendency
 - GI bleeding - black vomitus**

Phases of Clinical Yellow Fever

- **Phase 1 - non specific febrile illness**
 - viremic patient, but diagnosis difficult
- **Period of Remission**
 - brief clinical improvement
 - 3rd-4th day after onset
- **Phase 2 - "intoxication"**
 - hepatic and renal dysfunction
 - bleeding
- **50% case fatality rate for severe YF**

Suggestive Physical Signs

- **Fever is almost always present**
- **Faget's sign - relative bradycardia
- slow heart rate in relation to fever**
- **Conjunctival congestion**
- **Flushing of face and neck**
- **Tongue reddened at end and margins**
- **Minor gingival hemorrhages**

Surveillance Case Definitions

- **SUSPECTED CASE =**
Sudden onset of fever, followed by jaundice
AND one or more:
 - bleeding in the mouth
 - black vomitus
 - death

- **CONFIRMED CASE =**
Suspected case AND
 - virus isolation from blood or liver OR
 - positive neutralization or IgM capture

Suspect Possible Yellow Fever

- **Fever with scleral icterus OR**
- **Fever with scleral icterus in a patient with a negative malaria smear.**
- **Additional case definition for use during epidemics (not mandatory)**
- **Less strict definition produces a more accurate case count in epidemic**

Report Suspected Yellow Fever Cases Urgently

- **Report a single suspected case immediately**
- **Report a suspected epidemic immediately**
- **Do not wait for confirmation**
- **Take informal reports seriously**
 - **from travelers and merchants**
 - **from the public**
 - **from news reports**

How To Report Suspected Yellow Fever

- Report to the designated level
- Use most rapid and reliable means available
 - telephone
 - radio
 - FAX or TELEX
 - telegram
 - courier (Ministry or informal)
- When using informal or unsure means, send a back-up report as well

What to Report

- **Number of cases and deaths**
- **Location of cases**
- **Date of onset of disease**
- **Clinical details**
- **Action taken**

Record Patient Information

- **Diagnosis**
- **Date of consultation and of onset of symptoms**
- **Age, sex, address**
- **Specimens obtained**
- **Treatment**
- **Outcome**

Zero Reporting

- **Zero reporting = during an epidemic, send a report even if no cases or deaths occurred**
- **Distinguishes between areas**
 - that really had no cases
 - that did not send a report
 - from which the report did not arrive
- **Helps evaluate effectiveness of vaccination campaign**

Role of Clinical Health Workers in Surveillance

- **Collect information**
- **Fill out and send in forms promptly**
- **Immediately report suspected cases of YF**
- **Make graphs and maps**
- **Analyze the information and act on it**

When Informed of Suspected Yellow Fever Cases

- Actions at District Level -

- **Review reports of suspected cases**
 - **do they meet the case definition?**
 - **are they clinically consistent with YF?**

- **Contact nearby health facilities**
 - **have they seen cases?**
 - **remind them of clinical presentation and case definitions**

- **Send an Investigation Team to the field**

- **Inform the province when there are patients who meet the case definition**

Laboratory Confirmation of Yellow Fever

- Not routine for most laboratories
- Identify a reference laboratory in the country
and / or
- Arrange for laboratory support with the WHO
country or Regional Representative
- Control of YF demands extraordinary resources -
which may not be given until laboratory
confirmation is obtained.